MATERIAL DATA SHEET

STEEL GRADE

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OVAKO

61SiCr7 All

General Information

61SiCr7 is a Silicon Manganese alloy steel mainly used for heavy duty springs, but also used for tooling where impact resistance is of importance. As-quenched hardness is expected to fall within a range of about 58 - 63 HRC. Hardenability is considered fairly high.

Similar designations

1.7108, 60SiCr7 DIN 17221, 9260H, ASTM 9260, SB9064 - 61Si7 EN10027

Chemical composition

Variant	Cast	Weldability		C %	Si %	Mn %	P %	S %	Cr %
SB9064	CC	CEV 0.82_{max}	Min	0.59	1.60	0.70	-	-	0.20
		Pcm 0.74_{max}	Max	0.64	1.80	0.90	0.035	0.025	0.40
61SiCr7 EN10089:2002	CC	CEV 0.83_{max}	Min	0.57	1.60	0.70	-	-	0.20
		Pcm 0.74_{max}	Max	0.65	2.00	1.00	0.025	0.025	0.45

Mechanical Properties

Variant	Condition	Format	Dimension [mm]	Hardness
SB9064	+AR	Round bar	10 typical	< 330 HB

*$Rp_{0.2}$ * R_{eh}, ** R_{el}*

Transformation temperatures

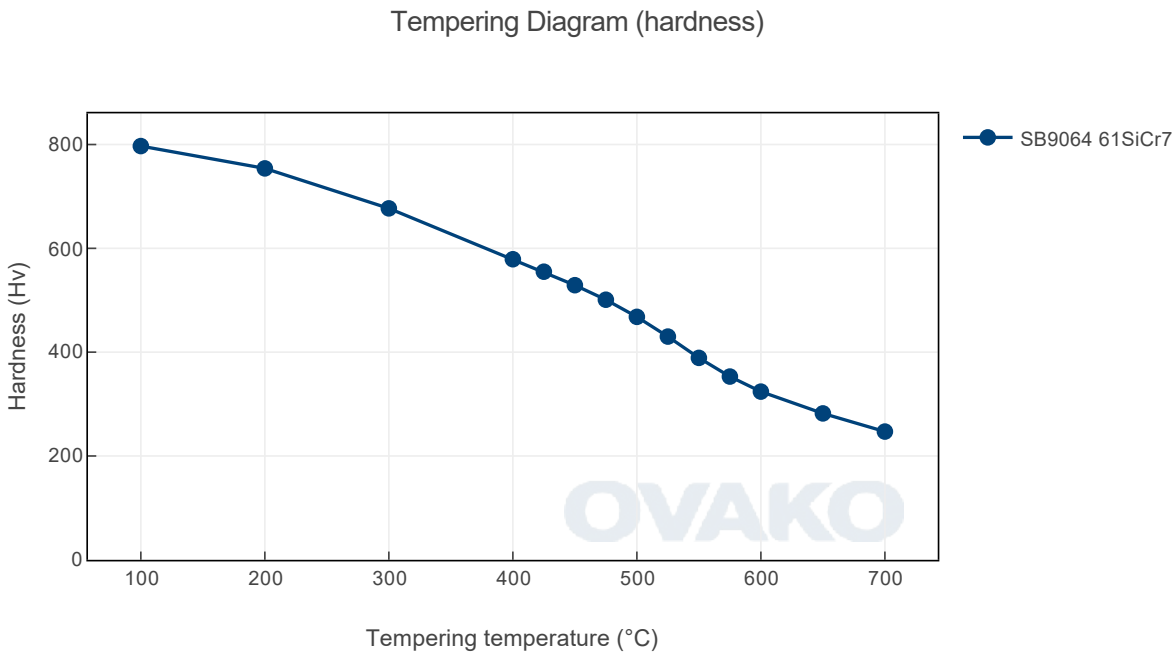
	Temperature °C
MS	238
AC1	772
AC3	814

Heat treatment recommendations

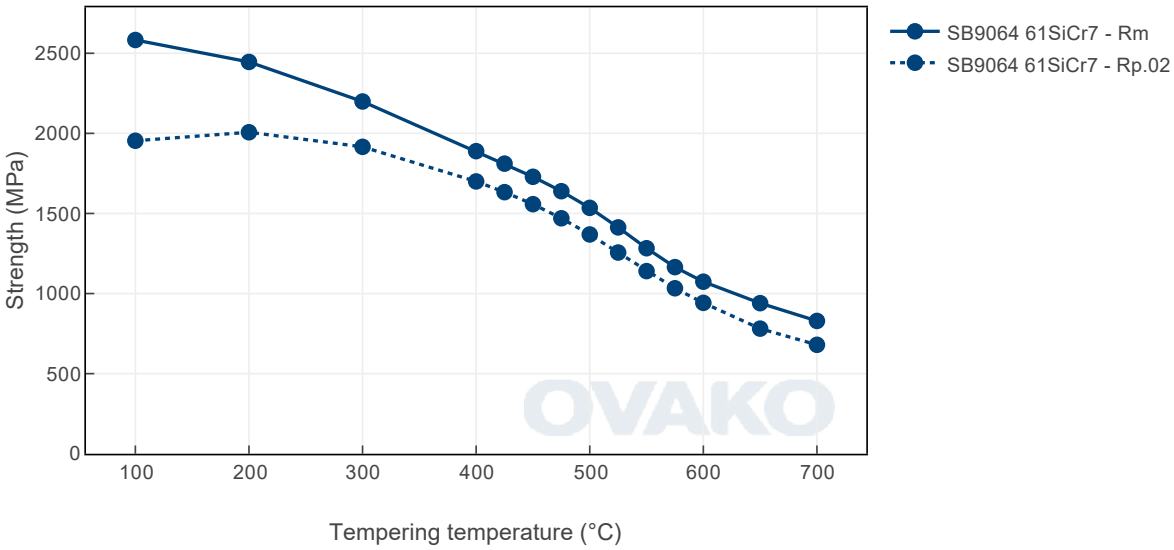
Treatment	Condition	Temperature cycle	Cooling/quenching
Hot forging	+AR	Soaking 1000 - 1200ºC	Slow cooling in air
Normalizing	+AR	Soaking at 900ºC	In air
Hardening	+AR	Direct hardening, soaking at 870ºC	Quenching in oil
Tempering	+QO	Tempering at min.150ºC immediately after the temperature after hardening has reached 40 -50ºC	In air

Heat Treatment Guide generated Graphs

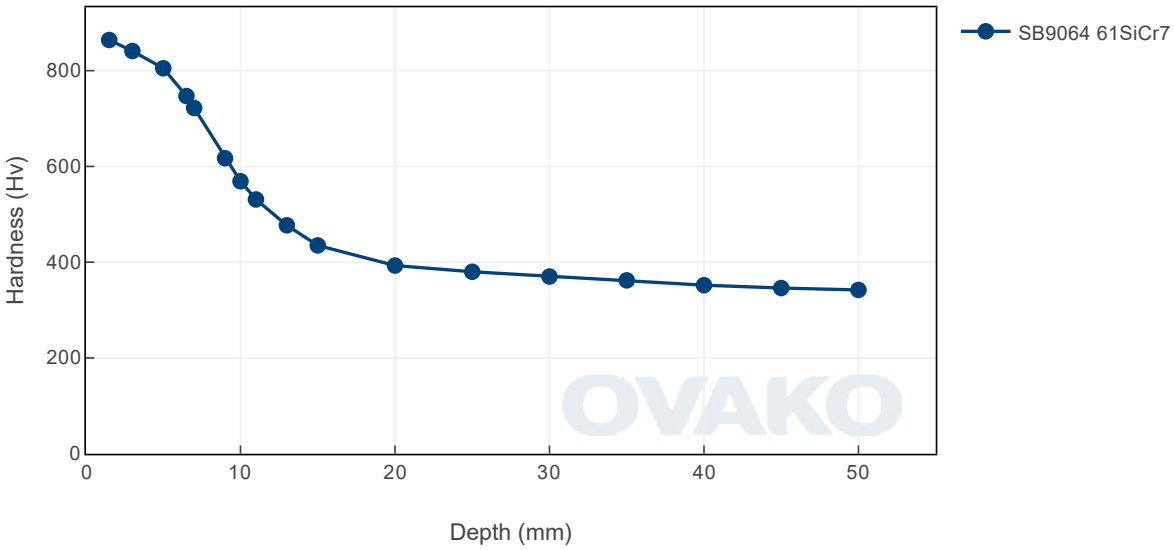
The following graphs are generated from a theoretical model. For further info see the Heat treatment guide module. Select a specific grade version for individual display.



Tempering Diagram (strength)



Jominy


SB9064 61SiCr7
Hardness (Hv)
800
600
400
200
0
0
10
20
30
40
50
Depth (mm)
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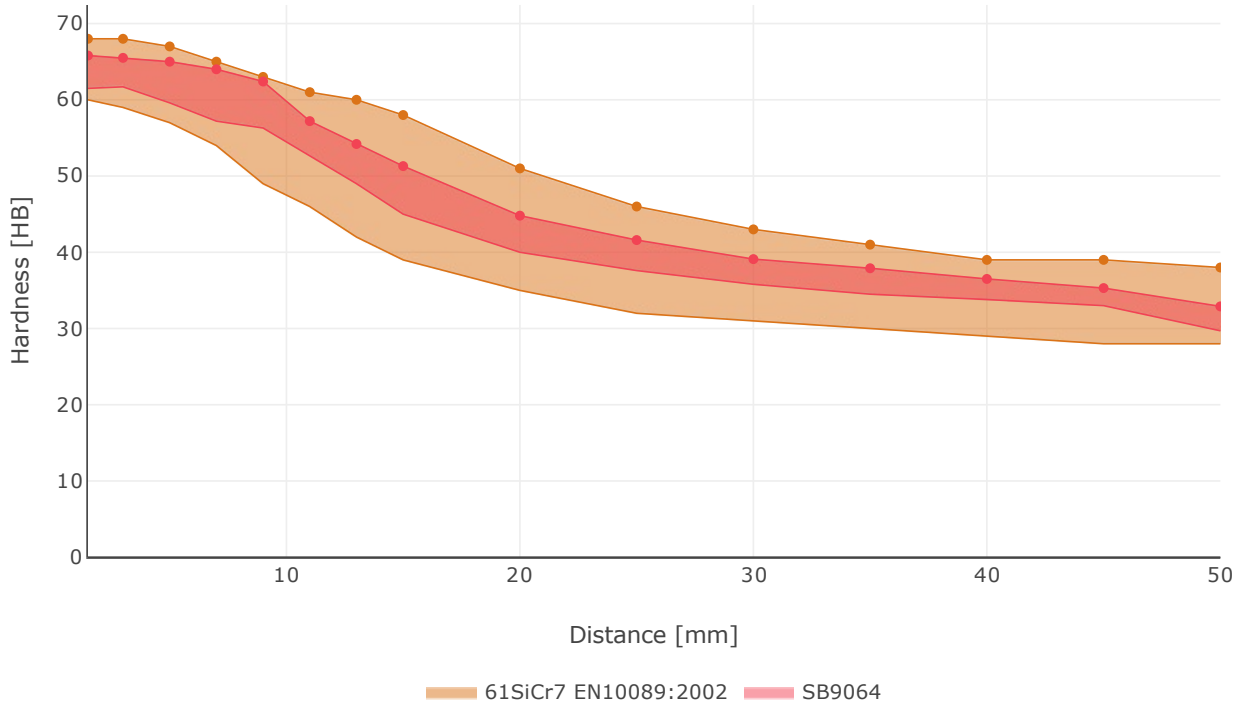
Hardenability



SUSTAINABILITY-ENVIRONMENTAL IMPACT DATA

At Ovako sustainability and reduction of our environmental impact is a major focus in everything we do.
Further information is found here.

Steel works	Hofors	Smedjebacken	Imatra
CO2e/kg	120	62	76

To get the full picture of our products environmental impact we have to look at all of our CO_2 emission sources.
Not only the steel work Scope 1-2 itself, but all operations downstream in our production, heating and heat treatment furnaces etc (full scope 1-2) as well as all the emission from input material, eg. alloys, scope 3.

Steel Grade	Format	Condition	Scope 1-3 (CO2e kg /1000 kg steel)	Climate compensated Net emission = Scope 3 (CO2e kg /1000 kg steel) Scope 1 - 2 = 0 (compensated)
SB9064	Flat bar	+AR	429	209

All above data are to be seen as typical values for the specified format and condition. Detailed information about your specific product please contact your sales contact.

Other properties (typical values)

Youngs module (GPa)	Poisson´s ratio (-)	Shear module (GPa)	Density (kg/m3)
210	0.3	80	7800
Average CTE 20-300°C (µm/m°K)	Specific heat capacity 50/100°C (J/kg °K)	Thermal conductivity Ambient temperature (W/m°K)	Electrical resistivityAmbient temperature (µΩm)
12	460 - 480	40 - 45	0.20 - 0.25

Contact us

Would you like to know more about our offers? Don´t hesitate to contact us:

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For more detailed information please visit http://www.ovako.com/en/Contact-Ovako/